

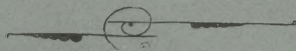
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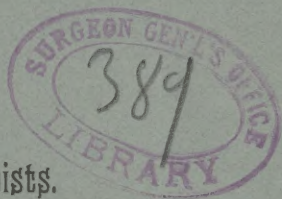
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DETERMINATION OF THE NUMBER OF TRICHINÆ OR OTHER ANIMAL PARASITES IN A GIVEN QUANTITY OF MEAT.

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After meat has been found to be infested with parasites, if it is desired to determine the number in a kilogram, pound or any other weight, a section of the meat is made with some sharp instrument and the thickness of the section is measured by placing it between two cover-glasses whose thickness is known, and then after pressing the cover-glasses quite firmly together, measuring the entire thickness. The thickness of the section of meat is then easily determined by subtracting the thickness of the cover-glasses from the number representing the thickness of the cover-glasses and the meat. The sections may be from one-tenth to three-tenths of a millimeter thick.*

Put a square diaphragm into the ocular and by means of a stage micrometer determine the value of the side of the square field.† Put the section of meat under the microscope and count the number of parasites in the field, moving the specimen and making twenty or more counts in order to get an average which shall fairly represent the number of parasites in one field. Find the cubic contents of one field by multiplying the thickness of the section by the number

* A very convenient instrument for making all fine measurements like these, is the cover-glass measurer of Zeiss.

† It is of course unnecessary to have a square diaphragm in the ocular, but it is easier for most persons to compute the cubic contents of a solid having square than one having circular ends.



representing the value of the sides of the square field. From this, compute the number of parasites in a cubic centimeter. Divide this number by the specific gravity of muscle (1.058) and the result will give the number of parasites in one gram of the meat. From this the number in one kilogram may be obtained by multiplying the number in one gram by 1000, or the number in one pound avoirdupois by multiplying by 453.593 (the number of grams in a pound). The following is an example of the application of the method:

Number of trichinæ in a pound and kilogram of the muscle of a cat: The thickness of the section was .27 mm. and the value of the side of the square field as seen in the ocular was 1.5 mm. The number of trichinæ in 20 different fields was as follows: 4-3-0-2-2-3-0-1-2-4-8-3-4-5-5-2-4-2-2-4 = 60 the average number in each field being therefore 3. The cubic contents of each field was $.27 \times 1.5 \times 1.5 = .6075$ cubic millimeter. Now, if in .6075 c. mm. there are 3 trichinæ in a whole c. mm. there would be $3 \div .6075 = 4.938$ and in a cubic centimeter of meat there would be $4.938 \times 1000 = 4938$. trichinæ. But as the specific gravity of muscle is 1.058, in a gram of meat there would be $4938 \div 1.058 = 4667.3$. In a kilogram there would be 1000 times this number and in a pound avoirdupois 453.593 times as many, this would give for a kilogram 4,667,300 and for a pound 2,117,054.

